

4. (Amended) An evaporator and condenser unit for use in distilling a liquid, the evaporator and condenser unit comprising:

a housing;

a motor for supplying rotary power within the housing;

a compressor having a compressor inlet for receiving a vapor generated within the housing and a compressor outlet for returning compressed vapor to the housing;

a heat exchanger plate disposed within the housing and operatively coupled to the motor for rotation about an axis, the heat exchanger plate having a plurality of folds and two opposing edges that are joined together so as to give the folded plate a generally circular shape having a center that is coaxial with the axis of rotation, the folds defining a plurality of spaced-apart panels having corresponding surfaces that define alternating evaporating and condensing chambers between opposing panel surfaces; and

a first end plate and a second end plate disposed within the housing substantially perpendicular to the axis of rotation, the folded heat exchanger plate mounted between the first and second end plates so as to seal the evaporating chambers from the condensing chambers, wherein

the evaporating chambers are in fluid communication with the compressor inlet so as to provide vapor thereto, the condensing chambers are in fluid communication with the compressor outlet so as to receive compressed vapor therefrom, and the evaporating and condensing chambers are sealed from each other;

the evaporating and condensing chambers include inner and outer edges relative to the axis of rotation.

the evaporating chambers are sealed at their inner edges by corresponding folds in the heat exchanger plate, and are open at their outer edges.

the condensing chambers are open at their inner edges, and are sealed at their outer edges by corresponding folds in the heat exchanger plate, and

the housing includes a lower portion defining a sump containing the liquid to be distilled, the unit further comprises a plurality of liquid feed distribution ports extending through the second end plate such that a liquid flow path exists between the sump and the evaporating chambers via the liquid feed distribution ports during rotation of the heat exchanger plate.

5. (Amended) An evaporator and condenser unit for use in distilling a liquid, the evaporator and condenser unit comprising:

a housing;

a motor for supplying rotary power within the housing;

a compressor having a compressor inlet for receiving a vapor generated within the housing and a compressor outlet for returning compressed vapor to the housing;

a heat exchanger plate disposed within the housing and operatively coupled to the motor for rotation about an axis, the heat exchanger plate having a plurality of folds and two opposing edges that are joined together so as to give the folded plate a generally circular cross-section, the folds defining a plurality of spaced-apart panels having corresponding surfaces that define alternating evaporating and condensing chambers between opposing panel surfaces; and

a first end plate and a second end plate disposed within the housing substantially perpendicular to the axis of rotation, the folded heat exchanger plate mounted between the first and second end plates so as to seal the evaporating chambers from the condensing chambers, wherein

the evaporating chambers are in fluid communication with the compressor inlet so as to provide vapor thereto, the condensing chambers are in fluid communication with the compressor outlet so as to receive compressed vapor therefrom, and the evaporating and condensing chambers are sealed from each other,

the evaporating and condensing chambers include inner and outer edges relative to the axis of rotation,

the evaporating chambers are sealed at their inner edges by corresponding folds in the heat exchanger plate, and are open at their outer edges,

the condensing chambers are open at their inner edges, and are sealed at their outer edges by corresponding folds in the heat exchanger plate, and

the housing includes a lower portion defining a sump containing the liquid to be distilled, the unit further comprising:

at least one rotary scoop tube coupled to the second end plate and extending into the sump; and

a plurality of liquid feed distribution ports extending through the second end

plate, the rotary scoop tube and the liquid feed distribution ports cooperating to provide a liquid flow path between the sump and the evaporating chambers during rotation of the heat exchanger plate.

12. (Amended) The evaporator and condenser unit of claim 4 wherein the folds of the heat exchanger plate are co-planar with the axis of rotation.

16. (Amended) A heat exchanger for use in a distiller having a supply of compressed vapor, a liquid to be distilled, and source of rotary power, the heat exchanger comprising:

a heat exchanger plate operatively coupled to the source of rotary power for rotating the heat exchanger plate about an axis, the heat exchanger plate having a plurality of folds and two opposing edges that are joined together so as to give the folded plate a generally circular shape having a center that is coaxial with the axis of rotation, the folds defining a plurality of spaced-apart panels having corresponding surfaces that define alternating evaporating and condensing chambers between opposing panel surfaces; and

a first end plate and a second end plate arranged substantially perpendicular to the axis of rotation, the folded heat exchanger plate mounted between the first and second end plates and cooperating with the heat exchanger plate so as to seal the evaporating chambers from the condensing chambers, wherein

the evaporating chambers are in fluid communication with the liquid to be distilled, the condensing chambers are in fluid communication with the supply of com-

pressed vapor, and the evaporating and condensing chambers are sealed from each other,

the evaporating and condensing chambers include inner and outer edges relative to the axis of rotation.

the evaporating chambers are sealed at their inner edges by corresponding folds in the heat exchanger plate, and are open at their outer edges,

the condensing chambers are open at their inner edges, and are sealed at their outer edges by corresponding folds in the heat exchanger plate, and

the distiller further includes a sump containing the liquid to be distilled, the heat exchanger further comprising a plurality of liquid feed distribution ports extending through the second end plate such that a liquid flow path exists between the sump and the evaporating chambers via the liquid feed distribution ports during rotation of the heat exchanger plate.

23. (Amended) The heat exchanger of claim 16 wherein the folds of the heat exchanger plate are co-planar with the axis of rotation.

26. (New) The evaporator and condenser unit of claim 4 wherein the compressor is disposed at the center of the heat exchanger plate between the first and second end plates, and rotates therewith.

27. (New) The evaporator and condenser unit of claim 26 further comprising a stationary shaft coupled to the compressor.

28. (New) The evaporator and condenser unit of claim 4 wherein a liquid feed distribution port is located at the inner edge of each evaporating chamber.

29. (New) The evaporator and condenser unit of claim 8 wherein the restriction element is formed by opposing ridges in the heat exchanger plate.

30. (New) The evaporator and condenser unit of claim 8 wherein the heat exchanger plate has a length between the first and second end plates, and the restriction elements extends the length of the heat exchanger plate.

31. (New) The evaporator and condenser unit of claim 9 wherein the gap is on the order of 0.002 to 0.010 inches.

32. (New) The evaporator and condenser unit of claim 30 wherein each restriction element defines a corresponding gap in the respective evaporation chamber through which the liquid flows, and the gap is on the order of 0.002 to 0.010 inches

33. (New) The evaporator and condenser unit of claim 5 wherein the compressor is disposed at the center of the heat exchanger plate between the first and second end plates, and rotates therewith.

34. (New) The evaporator and condenser unit of claim 33 further comprising a stationary shaft coupled to the compressor.

35. (New) The evaporator and condenser unit of claim 5 wherein a liquid feed distribution port is located at the inner edge of each evaporating chamber.